Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

1-30. (Cancelled)

31. (Currently Amended) A rheocasting method for semi-solid metal casting, comprising:

providing a first alloy, the first alloy including an aluminum-silicon hypoeutectic alloy;

providing a second alloy, the second alloy including a grain refiner;

providing a reactive material;

liquefying at least one of the first alloy and the second alloy by heating to a first temperature;

combining the reactive material and the second alloy to form a mixture;

combining the first alloy and the mixture to form a combination;

generating a semi-solid metal by cooling the combination to a second temperature, wherein the semi-solid metal includes a multitude of aluminum particles having a particle size and a particle number;

injecting the semi-solid metal into a die cavity to form a cast product; and

controlling the particle size and the particle number by modulating the second temperature and an elapse time between the generation of the semi-solid metal and the injection.

32. (Previously Presented) The method of claim 31, wherein the particle size is minimized by reducing the elapse time.

33. (Previously Presented) The method of claim 31, wherein the particle number is maximized by reducing the elapse time.

34. (Previously Presented) The method of claim 31, wherein the elapse time is reduced by combining the first alloy with the second alloy, the first alloy having a relatively lower temperature than the second alloy.

35. (Previously Presented) The method of claim 31, wherein the second alloy comprises at least one of titanium, niobium, tantalum, vanadium, molybdenum, zirconium, and beryllium.

36. (Previously Presented) The method of claim 31, wherein the reactive material comprises at least one of aluminum, boron, carbon, sulfur, phosphorus, and nitrogen.

37. (Previously Presented) The method of claim 31, wherein the cast product comprises aluminum particles having an average diameter of less than about 70 microns.

38. (Previously Presented) The method of claim 37, wherein the cast product comprises aluminum particles having an average diameter from about 40 microns to about 60 microns.

39. (Previously Presented) The method of claim 31, further comprising heating both the first alloy and the second alloy.

40. (Previously Presented) The method of claim 31, wherein the first temperature is greater than about 617°C.

41. (Previously Presented) The method of claim 40, wherein the first temperature is about 1135°C.

42. (Previously Presented) The method of claim 31, wherein the first temperature is about 600°C to about 700°C.

43. (Previously Presented) The method of claim 42, wherein the first temperature is about 612°C to about 630°C.

44. (Previously Presented) The method of claim 31, wherein the first temperature is about 1135°C.

45. (Previously Presented) The method of claim 31, wherein the first alloy comprises about less than 11.7% silicon.

46. (Previously Presented) The method of claim 45, wherein the first alloy comprises about 6% to about 8% silicon.

47. (Previously Presented) The method of claim 46, wherein the first alloy comprises about 7% silicon.

48. (Previously Presented) The method of claim 31, wherein the second alloy comprise about 1% to about 10% titanium.

49. (Previously Presented) The method of claim 48, wherein the second alloy comprises about 2% to about 5% titanium.

50. (Previously Presented) The method of claim 49, wherein the second alloy comprises about 3% to about 5% titanium.

51. (Previously Presented) The method of claim 31, wherein the cast product comprises about less than 1% titanium.

52. (Previously Presented) The method of claim 51, wherein the cast product comprises about 0.2% to about 0.5% titanium.

53. (Previously Presented) The method of claim 52, wherein the cast product comprises about 0.25% to about 0.3% titanium.

54. (Withdrawn) A cast product made by a semi-solid metal casting method, comprising:

a first alloy including an aluminum-silicon hypoeutectic alloy;

a second alloy including a grain refiner, wherein at least one of the first alloy and the second alloy is liquefied by heating to a first temperature;

a reactive material;

a mixture formed by combining the reactive material and the second alloy;

a combination formed by combining the first alloy and the mixture; and

a semi-solid metal formed by: cooling the combination to a second temperature, the semi-solid metal including a multitude of aluminum particles having a particle size and a particle number; injecting the semi-solid metal into a die cavity; and controlling the particle size and the particle number by modulating the second temperature and an elapse time between the formation and injection of the semi-solid metal.

55. (Withdrawn) The cast product of claim 54, wherein the particle size is minimized by reducing the elapse time.

56. (Withdrawn) The cast product of claim 54, wherein the particle number is maximized by reducing the elapse time.

57. (Withdrawn) The cast product of claim 54, wherein the elapse time is reduced by combining the first alloy with the second alloy, the first alloy having a relatively lower temperature than the second alloy.

58. (Withdrawn) The cast product of claim 54, wherein the second alloy comprises at least one of titanium, niobium, tantalum, vanadium, molybdenum, zirconium, and beryllium.

59. (Withdrawn) The cast product of claim 54, wherein the reactive material comprises at least one of aluminum, boron, carbon, sulfur, phosphorus, and nitrogen.

60. (Withdrawn) The method of claim 54, wherein the aluminum particles have an average diameter from about 40 microns to about 60 microns.